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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/582,964	07/06/2000	KEITH B HOFFMAN	THUR-001	4643

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EXAMINER	
WANG, SHENGJUN	
ART UNIT	**PAPER NUMBER**
1617	

DATE MAILED: 07/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/582,964	HOFFMAN ET AL.	
	Examiner	Art Unit	
	Shengjun Wang	1617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *43,46,47,51 and 54-61* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *43,46,47,51 and 54-61* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 30, 2006 has been entered.

Claim Rejections 35 U.S.C. 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 43, 46, 47, 51, 54-58 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claimed methods are directed to a method of treating epilepsy, by administering a serine protease inhibitor. First, there is lack of written description as to the serine protease inhibitors in general. As noted in pages 6 to 7 in the specification, there are many kinds of proteases. The application provides written description to some of the protease inhibitors, but fails to provide sufficient written description commensurate with the scope herein claimed. Applicants merely define those ligands by their function, not by their structures. Attention is directed to *General Electric Company v. Wabash Appliance Corporation et al* 37 USPQ 466 (US 1938), at 469, speaking to functional language at the point of novelty as herein employed: the

vice of a functional claim exists not only when a claims is wholly functional, if that is ever true, but when the inventor is painstaking when he recites what has already been seen, and then uses conveniently functional language at the exact point of novelty. Functional language at the point of novelty, as herein employed by Applicants, is further admonished in *University of California v. Eli Lilly and Co.* 43 USPQ2d 1398 (CAFC 1997) at 1406: stating this usage does little more than outlin[e] goals appellants hope the recited invention achieves and the problems the invention will hopefully ameliorate. Applicants functional language at the point of novelty fails to meet the requirements set forth under 35 USC 112, first or second paragraph. Claims employing functional language at the point of novelty, such as Applicants, neither provide those elements required to practice the inventions, nor inform the public during the life of the patent of the limits of the monopoly asserted *General Electric Company v. Wabash Appliance Corporation et* supra, at 468.

It is note that the application does not define the genus of "serine protease inhibitors" or by structure, or by structure in conjunction with specific functional characteristics. The particular examples herein are distinct each from the others in their chemical structures. One of skilled artisan would not be able to envision the other "serine protease inhibitor" which would be useful in the claimed invention. The instant specification fails to provide descriptive information, such as definitive structural or function features of the claimed genus of "serine protease inhibitors" that would distinguish the claimed "serine protease inhibitors" from other molecules with the similar properties. Since the disclosure fails to describe the common contributes or characteristics that identify members of the genus, and because the genus is highly variant, the disclosure of certain "serine protease inhibitors" is insufficient to describe the genus. *Vas-Cath*

Inc. v. Mahurkar, 19 USPQ 2d 1111, clearly states "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is, for purpose of the 'written description' inquiry, whatever is now claimed." (see page 1117). The specification does not "clearly allow person of ordinary skill in the art to recognize that [he or she invented what is claimed." (see Vas-Cath at page 1116). As discussed above, by reading the specification herein, the skilled artisan cannot envision the detailed chemical structure of the encompassed genus of serine protease inhibitors.

1. Claims 43, 46, 47, 51, 54-58 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for employ those protease inhibitors disclosed at pages 6-7 in the specification, does not reasonably provide enablement for other compounds which may function as serine protease inhibitors. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims. The claimed invention define the compounds employed therein solely by its function, encompassing any compounds that may function as serine protease inhibitors. The instant specification fails to provide information that would allow the skilled artisan to practice the instant invention without undue experimentation. Attention is directed to In re Wands, 8 USPQ 2d 1400 (CAFC 1988) at 1404 where the court set forth the eight factor to consider when assessing if a disclosure would have required undue experimentation. The court recited eight factors:

1) the quantity of experimentation necessary,

2) the amount of direction or guidance provided,

3) the presence of absence of working examples,

4) the nature of the invention,

5) the state of the prior art,

6) the relative skill of those in the art,

7) the predictability of the art, and

8) the breadth of the claims.

The claim recites the employment of serine protease inhibitors. The application does not define the genus of "serine protease inhibitors" or by structure, or by structure in conjunction with specific functional characteristics. The particular examples herein are distinct each from the others in their chemical structures. One of skilled artisan would not be able to envision the other "serine protease inhibitor" which would be useful in the claimed invention. The instant specification fails to provide descriptive information, such as definitive structural or function features of the claimed genus of "serine protease inhibitors" The state of the prior art indicates that it is unpredictable as to the structures of serine protease inhibitors. Applicants fail to provide information allowing skilled artisan to ascertain these compounds without undue experimentation. In the instant case, only a limited number of "serine protease inhibitors" examples are set forth, thereby failing to provide sufficient working examples. It is noted that these examples are neither exhaustive, nor define the class of compounds required. The pharmaceutical art is unpredictable, requiring each embodiment to be individually assessed of physiological activity. The instant claims read on all "serine protease inhibitors", necessitating an exhaustive search for the embodiments suitable to practice the claimed invention, absent undue experimentation.

Additionally, claims 51, 54, 56-58 are rejected under 35 U.S.C. 112, first paragraph because applicants fail to set forth the criteria that define those situations wherein this pathology, epilepsy, could be prevented. Additionally, Applicant fails to provide information allowing the skilled artisan to ascertain these situations without undue experimentation. The claims read on preventing all type onsets of epileptic seizures. In the instant case, no examples is set forth illustrating a situation where epilepsy is prevented, thereby failing to provide sufficient working examples. It is noted that these examples are not exhaustive. The pharmaceutical art is unpredictable, requiring each embodiment to be individually assessed for physiological activity. In the instant case, it is known in the art that many underline etiologies may cause epilepsy. There is no single drug known in the art can control all type s of seizures. See, e.g., The Merck Manual, pages 1366-1375 attached hereto. The instant claims read on preventing all type of epileptic seizure activity necessitating an exhaustive search for the embodiments suitable to practice the claimed invention. Applicants fail to provide information sufficient to practice the claimed invention, absent undue experimentation.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 55 and 57 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. The term "like" in claims 55 and 57 is a relative term which renders the claim indefinite. The term "like" is not defined by the claim, the specification does not provide a standard for

ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably appraised of the scope of the invention. The claims are indefinite as to the serine protease encompassed thereby.

Claim Rejections 35 U.S.C. 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 43, 46, 47, 51, 54-58 are rejected under 35 U.S.C. 102(e) as being anticipated by Strickland et al. (US 5,786,187, IDS).

7. Strickland et al. teach a method of treating, suppressing or preventing seizure, and/or epilepsy in human or animal by inhibiting the activity of serine protease, particularly, with a tPA inhibitor. See, particularly, column 1, lines 55 to column 2, line 9, column 3, lines 17-28, column 11, lines 21-48 and the claims.

Claim Rejections 35 U.S.C. 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 43, 46, 47, 51, 54-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strickland et al. (US 5,786,187, IDS) and in further view of Citron et al.

10. Strickland et al. teach a method of treating, suppressing or preventing seizure, and/or epilepsy in human or animal by inhibiting the activity of serine protease, particularly, with a tPA inhibitor. See, particularly, column 1, lines 55 to column 2, line 9, column 3, lines 17-28, column 11, lines 21-48 and the claims.

11. Strickland does not teach expressly the employment of AEBSF as the inhibitor or the particular amounts herein.

12. However, Citron at al teaches that AEBSF is an old and well-known broad spectrum serine protease inhibitor, and is particularly useful in neuron cell protection. See, particularly, the abstract.

Therefore, it would have been prima facie obvious to a person of ordinary skill in the art, at the time the claimed the invention was made, to use AEBSF as the inhibitor in Strickland's method for treating patients with epilepsy.

A person of ordinary skill in the art would have been motivated to use AEBSF as the inhibitor in Strickland's method for treating patients with epilepsy because AEBSF is an old and well known broad spectrum serine protease inhibitor, and would have reasonably expected to be effective in inhibiting tPA, a serine protease. As to the particular function recited in claim 60, it is noted that a chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ 1655, 1658 (Fed. Cir. 1990. See MPEP 2112.01. The burden is shifted to Applicant to show that the prior art product does not inherently

possess the same properties as instantly claimed product. As to the effective amounts recited in claim 61, note the optimization of a result effective parameter, e.g., effective amount of a therapeutical agent, is considered within the skill of the artisan. See, In re Boesch and Slaney (CCPA) 204 USPQ 215.

Response to the Arguments

Applicants' amendments and remarks submitted May 30, 2006 have been fully considered, but are not persuasive.

Regarding the enablement of "serine protease inhibitor," applicants argue that "serine protease inhibitor is known in the art to refer to a class of compound that all inhibit serine protease. One of skill in the art can readily determine whether a given compound is a serine protease inhibitor by simply assaying that compound to determine whether it has serine protease inhibitory activity." The arguments are unpersuasive. It is noted that the specification merely gives one specific example for serine protease inhibitor, AEBSF. Page 6, line 28 states: "Inhibitors of interest include ..." The examples disclosed therein are not described specifically as serine protease inhibitor, but protease inhibitors in general. The application provide no description as to the structural feature of the "class of compounds" having inhibitory activity for serine protease. An assay method alone does not satisfy the written description for the class of compounds possessing the inhibitory activity. Particularly apropos to the present application is the following statement by the Supreme Court in Brenner v. Manson, 833 O.G. 1349, 148 USPQ 689, 696:

" But a patent is not a hunting license. It is not a reward for the search, but compensation for its successful conclusion. '[A] patent system must be related to the world of commerce rather than to the realm of philosophy.'"

The data presented in the application merely supports the treating a host suffering from epilepsy with AEBSF, does not support for the broad scope herein claimed, which encompasses any serine protease inhibitors. Showing AEBSF is similarly useful to other serine protease inhibitors provide no help to applicants' position. Since the application as originally filed provide no written description for serine protease inhibitors other than the several benzensulfonyl fluoride amines herein. Further, as discussed above, it is undue experimentation for make and/or identify other serine protease inhibitors not been recognized in the art at the time the claimed invention was made.

It is noted that applicants have not addressed the rejections of claims 51, 54, 56-58 over "prevention."

With respect to the rejections of 112 second paragraph over "like," it is noted that the frequent usage of using the term "trypsin-like" in the art does not provide any help in clearly and definitely defining the meaning of the term. Note, "like" is a relative term, any one of ordinary skill in the art may have his/her own view as to what is qualified as "like." In that regard, the claim is indefinite.

Regarding the rejections under 35 U.S.C. 102 over Strickland et al., note, Strickland et al. particularly claims method of treating seize by inhibiting the protease herein. Therefore, practice the method disclosed by Strickland would effectively practice the claimed method. Applicants contend that no inhibitor was tested by Strickland. Applicants are questioning the operability of the cited US patent. Since every patent is presumed valid (35 U.S.C. 282), and since that presumption includes the presumption of operability (Metropolitan Eng. Co. v. Coe, 78 F.2d 199,

25 USPQ 216 (D.C.Cir. 1935), examiners should not express any opinion on the operability of a patent. Further, since in a patent it is presumed that a process if used by one skilled in the art will produce the product or result described therein, such presumption is not overcome by a mere showing that it is possible to operate within the disclosure without obtaining the alleged product. In re Weber, 405 F.2d 1403, 160 USPQ 549 (CCPA 1969). It is to be presumed also that skilled workers would as a matter of course, if they do not immediately obtain desired results, make certain experiments and adaptations, within the skill of the competent worker. Further, as shown in the cited reference, and argued by applicants, there are some old and well-known serine protease inhibitors, including those broad-spectrum inhibitors, available to one of ordinary skill in the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shengjun Wang whose telephone number is (571) 272-0632. The examiner can normally be reached on Monday to Friday from 7:00 am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreeni Padmanabhan, can be reached on (571) 272-0629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SHENGJUN WANG
PRIMARY EXAMINER

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Art Unit 1617